Assessment Schedule – 2008

Human Biology: Describe how humans respond to pathogens (90176)

Evidence Statement

Q	Evidence contributing to Achievement	Evidence Contributing to Achievement with Merit	Evidence Contributing to Achievement with Excellence
(a)(i)	*Describes ONE of:* • Breathed in through nose / mouth. • Virus on fingers transferred to mouth. • Eyes. • Kissing. They must say that it gets into the body. Cannot say 'from coughing and sneezing'.		
(ii)	*Describes ONE of:* • Mucus / cilia (nasal hair) trap virus in nasal passages / trachea / bronchi. • Stomach acid destroys virus. • Tears wash away virus in eyes. Must say how prevents entry – cannot simply say 'Mucus in nose'		
(b)	*Describes the speeding up of an immune response to help fight the virus when a moderate fever is present, eg ONE of:* • Lymphocyte / antibody production speeds up (in lymph nodes). • Phagocytes work faster to engulf virus / pathogens. • Faster filtering of pathogens / virus in lymph nodes. • Speeds up the immune response. • High temperature can destroy / denature (not kill) chickenpox virus.		
(c) (i)	*Describes TWO of:* • skin becomes red • swelling • pain • gets hot		

(c) (ii)	*Describes ONE of, eg:* • Histamines / chemicals released and causes vasodialation. • Histamine / chemicals released and causes capillaries to become more leaky.	*As for achieve then explains how inflammatory response stops pathogen spreading, eg* **A answer linked to ONE of:** • Allows more phagocytes and lymphocytes to get to the area. • Allows antibodies to exit capillaries and move into tissue.	*Discusses histamine affects in inflammatory response and links this to the speed of the response stopping the pathogen spreading, eg:* Damaged cells release histamines, which cause vasodilation and leaky capillaries. Vasodilation leads to increased blood flow, which brings more phagocytes and lymphocytes to the area. Leaky capillaries means the antibodies can escape the blood vessels and get to the site of infection. This leads to a faster response to infection and so prevents the spread of infection.
(d)	*Describes ONE of:* • Vaccine made up of dead or weakened pathogens to stimulate antibody production / immune response. • Vaccine helps body produce (chickenpox) antibodies without the person having to suffer the disease (symptoms).	*As Achievement, **linked to**:* Second exposure to the pathogen leads to either: • weaker or no symptoms of the disease • a faster response by the immune system to produce antibodies.	
(e)	*Describes ONE of:* • memory cells • antibodies • slower response due to weakened immune system.	*Memory cells or antibodies linked to weakened immune system leading to shingles, eg:* Memory cells against the virus are **no longer** in the body/ **no specific antibodies** are immediately available So causing shingles. The weakened immune system is slower to respond. During this time the person suffers shingles.	
(f)	*Two bullet points described* *Describes a way the body stops more bacteria entering, eg TWO of:* • Platelets help blood clot to form (bleeding stop). • Phagocytes engulf bacteria. • Lymphocytes produce antibodies.	*All three bullet points at describe AND explains ONE of the three bullet points, eg:* • As blood clot dries into a scab, the scab acts as a barrier to stop more bacteria entering the body. • Phagocytes move from blood vessels to the damaged area and engulf any bacteria present. • Lymphocytes release antibodies which clump bacteria OR attack the bacterial wall.	*Links together all explanations of platelets, phagocytes and lymphocytes in a discussion of the role of blood eg:* Platelets help the blood to clot and dry into a scab, which forms a physical barrier to bacteria. This prevents any more bacteria from entering the blood at this point. Phagocytes move out of the blood to the damaged area and engulf any bacteria present. The lymphocytes in the blood produce antibodies, which clump the bacteria, making them easier for the phagocytes to engulf .

Judgement Statement

Achievement	Achievement with Merit	Achievement with Excellence
Total of FIVE opportunities answered at Achievement level or higher. $5 \times A$	Total of at least SIX opportunities answered with THREE at Merit level or higher. $3 \times M + 3 \times A$	Total of at least SIX opportunities answered with ONE at Excellence level and TWO at Merit level. $1 \times E + 2 \times M + 3 \times A$